## **CLAIMS**

1. An isolated nucleic acid molecule containing a nucleotide sequence which encodes phosphatidylinositol-3' kinase associated protein(s).

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2. An isolated nucleic acid molecule of claim 1 which encodes a phosphatidylinositol-3 kinase associated protein(s) that bind to the intermediate SH2 domain on the regulatory subunit of PI3K by the associated protein(s) C-terminal amino acids, and that:

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- a) encodes the amino acid sequence shown in FIG. 2; or
- b) encodes the amino acid sequence encoded by the cDNA contained in the cDNA clone as deposited with the ATCC having accession No. 98189; or
- c) hybridizes under stringent conditions to the nucleotide sequence of (a) or to its complement.
- 3. An isolated nucleotide sequence encoding a chimeric protein comprising the nucleotide sequence of Claim 1 fused to a second nucleotide sequence that encodes a heterologous polypeptide.

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- 4. A nucleotide vector containing the nucleotide sequence of Claim 1.
- 5. An expression vector containing the nucleotide sequence of Claim 1 in operative association with a nucleotide regulatory sequence that controls expression of the nucleotide sequence in a host cell.
  - 6. A host cell that has been genetically engineered to contain the nucleotide sequence of Claim 1.

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7. A host cell that has been genetically engineered to contain the nucleotide sequence of Claim 1 in operative association with a nucleotide regulatory sequence that controls expression of the nucleotide sequence in the host cell.

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8. An isolated phosphatidylinositol-3' kinase associated protein(s) that bind to the intermediate SH2 domain on the regulatory subunit of phosphatidylinositol-3' kinase by the associated protein(s) C-terminal amino acids.

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9. An isolated phosphatidylinositol-3' kinase associated protein(s) of claim 8 which further comprises a bromodomain.

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10. An isolated phosphatidylinositol-3' kinase associated protein(s) of claim 9 comprising the amino acid sequence shown in FIG. 2, or the amino acid sequence encoded by the cDNA shown in Fig. 1.

11. A chimeric protein comprising said phosphatidylinositol-3' kinase associated protein(s) of claim 10 fused to a heterologous polypeptide.

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12. The chimeric protein of Claim 11 in which the heterologous polypeptide is a Glu tag or a myc epitope tag.

13. An antibody that immunospecifically binds the phosphatidylinositol, 3' kinase associated protein(s) of Claim 8.

14. A method for diagnosing disease in a mammal, comprising detecting a phosphatidylinositol-3' kinase associated protein(s) gene mutation contained in the genome of the mammal.

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15. A method for screening compounds useful for the treatment of cell growth disorders, comprising the steps of:

combining in solution a compound, activated PI3K, phosphatidylinositol-3' kinase associated protein(s), ATP, and lipid, and;

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assaying the transfer of phosphate from ATP to the lipid in the presence or absence of said compound.

16. The method of Claim 5, in which the lipid contains PtdIns(4,5)P<sub>2</sub>.

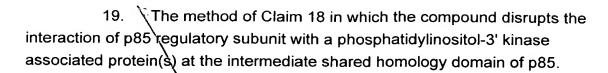
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17. A method for treating a cell growth disorder in a mammal, comprising administering a compound to the mammal in an amount sufficient to inhibit activation of PI3K through its regulatory subunit p85 by association with phosphatidylinositol-3' kinase associated protein(s).

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18. The method of Claim 17 in which the cell growth disorder is selected from the group consisting of restinosis and cancer.

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- 5 20. A method for treating a cell growth disorder in a mammal, comprising administering a compound to the mammal in an amount sufficient to inhibit expression of a phosphatidylinositol-3' kinase associated protein(s) in vivo.
- 21. The method of Claim 20 in which the cell growth disorder is selected from the group consisting of restinosis and cancer.
  - 22. A method for treating a cell growth disorder in a mammal, comprising administering a compound to a mammal in an amount sufficient to up regulate expression of a functional phosphatidylinositol-3' kinase associated protein(s) in the mammal.

